

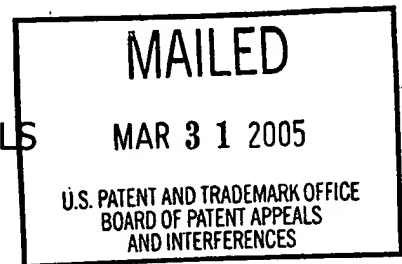
The opinion in support of the decision being entered today was
not written for publication and is not binding precedent of the Board

Paper No. 21

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WILHELMUS H. A. BRULS
and
ADRIANUS J. M. DENISSEN



Appeal No. 2005-0195
Application 09/614,810

ON BRIEF

Before THOMAS, BARRETT, and GROSS, ~~Administrative Patent Judges.~~

THOMAS, ~~Administrative Patent Judge.~~

DECISION ON APPEAL

Appellants have appealed to the Board from the examiner's final rejection of claims 1-21.

Representative claim 1 is reproduced below:

1. A method of embedding auxiliary data (XD) in an information signal (MP), comprising the step of modifying selected signal samples so as

Appeal No. 2005-0195
Application No. 09/614,810

to represent respective symbols of said auxiliary data, characterized in that said signal samples are transform coefficients ($c(i,j)$) obtained by transform coding the information signal and encoded into variable-length code words, the method further comprising the steps of:

- decoding a variable-length code word indicative of a selected coefficient
- modifying said selected coefficient so as to represent an auxiliary data symbol;
- encoding the modified coefficient into a new variable-length code word; and
- replacing the old code word by the new code word.

The following reference is relied upon by the examiner:

Hartung et al. (Hartung), "Digital Watermarking of MPEG-2 Coded Video In the Bitstream Domain," IEEE, pages 2621-2624 (1997)

Claims 1, 2, 4, 6, 13, 14 and 16-21 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Hartung. Claim 3 stands rejected under 35 U.S.C. § 103 as being obvious over Hartung alone, with the addition of appellants' prior art Figure 1D as to claims 5 and 7-10. Inasmuch as the examiner indicates at page 3 of the answer that the examiner relies upon the statements of the rejections in Paper No. 7, page 3 of this Office action indicates that the examiner rejects claims 11, 12 and 15 under 35 U.S.C.

Appeal No. 2005-0195
Application No. 09/614,810

§ 102 even though the initial statement of the rejection of the claims under 35 U.S.C. § 102 at page 2 does not include these claims.

The index of claims inside the file wrapper of this application appears to indicate that claims 16 and 19 are dependent claims. Claim 16 recites in its preamble a method of recording an information signal on a storage medium with a clause in the body of the claim referring to the method of embedding auxiliary data in an information signal of independent claim 1. A similar approach is followed in the arrangement of recording an information signal on a storage medium in claim 19 and its reference within its body of a clause of this claim to the independent claim 17 arrangement for embedding auxiliary data in an information signal. Note also the claim 21 reliance on independent claim 22. There is some question whether claims of this form are true dependent claims or whether they are, in fact, independent claims which incorporate by reference the limitations of the independent claims they refer to. ~~See Ex parte Morelands~~, 3 USPQ2d 1474, 1477 (Bd. Pat. App. & Int. 1987) (Examiner-in-Chief Lovell, dissenting in part) ; ~~Ex parte Porter~~, 25 USPQ2d

Appeal No. 2005-0195
Application No. 09/614,810

1144, 1147 (Bd. Pat. App. & Int. 1992); ~~In re Warmerdam~~, 33 F.3d 1354, 1358, 31 USPQ2d 1754, 1757 (Fed. Cir. 1994)(claim 5). In our opinion, the claims are independent claims. Nevertheless, this only affects how the claims should be treated for fee collection purposes, which is not a matter within the Board's jurisdiction.

Rather than repeat the positions of the appellants and the examiner, reference is made to the brief (there is no reply brief filed) for the appellants' positions, and to the rejections set forth in Paper No. 7 and the answer for the examiner's positions.

OPINION

For the reasons set forth by the examiner in the above-noted papers, we sustain the rejections of all claims on appeal respectively rejected under 35 U.S.C. § 102 and 35 U.S.C. § 103. Appellants state at page 3 of the brief that all claims 1-21 fall together. There also are no separate arguments presented as to any other claim on appeal other than common subject matter of each independent claim on appeal. Therefore,

Appeal No. 2005-0195
Application No. 09/614,810

appellants' arguments focus upon common language of representative independent claim 1 on appeal which recites in part "modifying said selected coefficient so as to represent an auxiliary data symbol," as recited in claims 1 and 17 and the corresponding language "transform coefficients obtained by transform coding the information signal, modified so as to represent said symbols," as recited in independent claims 13, 18 and 20.

The positions set forth by appellants as pages 5 and 6 of the brief focus upon the assertion that "nowhere in Hartung et al. was it disclosed that the watermarked DCT coefficient represents any kind of symbol." The corresponding argument represented in the paragraph bridging pages 5 and 6 is that "it is evident that Hartung et al. does not modify the coefficient to represent any kind of symbol."

The examiner's positions in the responsive arguments at pages 3-4 of the answer repeat the essence of the arguments presented by appellants just noted and respond as follows which we fully agree with:

The examiner respectfully disagrees. First of all, figure 6 clearly shows that "after the inverse quantization we have on DCT coefficient of the current block (= selected coefficient). We then add the corresponding DCT coefficient from the transformed watermark block (= modifying said selected

coefficient so as to represent an auxiliary data symbol), yielding a watermarked DCT coefficient. We then quantize and Huffman encode the watermark coefficient, together with its preceding run of zero coefficients (transform coefficients obtained by transform coding the information signal, modified so as to represent said symbols)" and therefore, it is submitted that Hartung et al. anticipates the above limitations.

Secondly, with regard to the applicants' argument that "However, nowhere is it disclosed in Hartung et al that the watermarked DCT coefficient represents any kind of symbol." It is respectfully submitted that the process of embedding information into multimedia is called watermarking (Abstract of Hartung et al) and that "yielding a watermarked DCT coefficient" represents embedded information which can be an arbitrary binary information, into a the compressed bit stream and therefore the watermarked DCT coefficient which includes an embedded information, represents an auxiliary data symbol.

As set forth in the initial sentence of Hartung's abstract at column 1 of page 2621 "embedding information into multimedia data, also called watermarking" is subsequently essentially defined. It is stated in the initial paragraph of the Introduction at the bottom of column 1 at page 2621 of Hartung that the "watermark is a digital code embedded in the video which typically indicates the copyright owner or, if applied to individual copies of the video, the identity of the receiver of each copy." It appears to us that

such watermarking, from an artisan's perspective, would clearly indicate that the watermark comprises a symbol. Moreover, Figures 1 and 2 at pages 2621 and 2622 of Hartung clearly show the entry of a digital watermark 1 parenthetically indicated to be a "copyright label" into the video data stream.

It is thus apparent to the artisan when viewing the circuit in Figure 6 and the discussion bridging pages 2622 and 2623 of Hartung that the watermark signals shown in Figure 6 comprise some kind of indicia relating to the copyright owner or an identity of the receiver of each copy or of a copyright label in accordance with these earlier noted teachings at pages 2621 and 2622. Hartung's invention is to embed such a watermark in the video data signal as shown in Figure 6. The coefficients relating to the data signal per se are modified with or by embedding in it a watermark, an auxiliary data symbol to the extent recited in the claims on appeal. The quantized DCT coefficient of the current signal block of incoming data is added with the corresponding DCT coefficient from the transformed watermark block itself, "yielding a watermarked DCT coefficient." The

discussion continues when it indicates that "we then quantize (Q) in Huffman encode (EC) the watermarked coefficient, together with its preceding run of zero coefficients."

The artisan would well appreciate therefore that the coefficient of the incoming data is modified by the addition of the coefficient of the watermark, the sum of which is in turn quantized and encoded or modified according to Figure 6. It is thus apparent to us that the examiner's position quoted above from page 4 of the answer is consistent with our understanding of the operation and showing of Figure 6 in Hartung. As such, we find appellants' arguments in the brief against the rejection to be without merit.

Finally, we note in passing that the subject matter of independent claim 20 appears to be directed to nonstatutory subject matter properly rejectable within 35 U.S.C. § 101. This claim recites per se an information signal with embedded auxiliary data symbols therein. A rejection of a signal per se was affirmed by the Board in Koo, U.S. Patent 5,568,202, issued October 22, 1996, and assigned to U.S. Philips. In Koo, after a

Appeal No. 2005-0195
Application No. 09/614,810

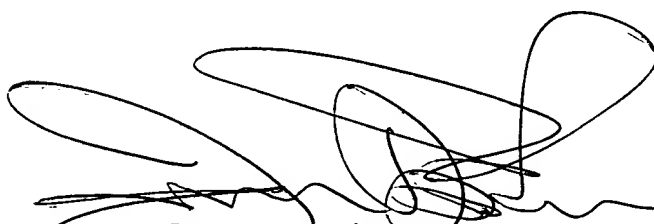
premature appeal to the Federal Circuit, the claims were allowed after the claim was amended to recite "wherein said reference signal is embodied in a processor readable memory" following the holding in In re Lowry, 32 F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994), wherein claims to a data structure stored in memory were held to be statutory subject matter because of the statutory nature of the memory. No memory or other physical structure is claimed here in claim 20 and our decision is not controlled by Lowry. On the other hand, claim 21 is inconsistent with Lowry.


In view of the foregoing, the decision of the examiner selectively rejecting all claims on appeal under 35 U.S.C. § 102 and/or 35 U.S.C. § 103 is affirmed.

Appeal No. 2005-0195
Application No. 09/614,810

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(iv)(effective Sept. 13, 2003; 69 Fed. Reg. 49960 (Aug. 12, 2004); 1286 Off. Gaz. Pat., Office 21 (Sept. 7, 2004)).

AFFIRMED


James D. Thomas
Administrative Patent Judge


Lee E. Barrett
Administrative Patent Judge


Anita Pellman Gross
Administrative Patent Judge

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Appeal No. 2005-0195
Application No. 09/614,810

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